

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
**REGION IX AIR DIVISION**

Technical Support Document  
For  
EPA's Direct Final Rulemaking  
For the  
California State Implementation Plan  
San Diego County Air Pollution Control District,  
Rule 67.16, Graphic Arts Operations

Prepared by: Adrianne Borgia

Reviewed by: Andrew Steckel

June, 2012

**Agency:** San Diego County Air Pollution Control District (SDCAPCD or District)

**SIP Approved Rule:** Rule 67.16 – Graphic Arts Operations  
Adopted and Effective– May 15, 1996  
Submitted – October 18, 1996  
EPA Approved – March 27, 1997 (62 FR 14639)

**Subject of this TSD:** Rule 67.16 – Graphic Arts Operations  
Adopted – November 9, 2011  
Effective – May 9, 2012  
Submitted – February 23, 2012

**RULE SUMMARY** – SDCAPCD Rule 67.16, Graphic Arts Operations, is a rule that applies to graphic arts, digital printing and laminating and drying operations. The primary purpose for the District’s amending Rule 67.16 is to ensure ongoing compliance with federal Reasonably Available Control Technology (RACT) requirements applicable to the printing industry. The proposed rule amendments also update the test methods for determining the VOC content of graphic arts and cleaning materials and the overall efficiency of emission control systems. In addition, the amendments include updated and new definitions and large digital printing operations were added to the rule’s exemptions with the provision that specific recordkeeping be applied.

SDCAPCD regulates an ozone nonattainment subpart 1 area for the 8-hour ozone national ambient air quality standard (NAAQS)<sup>1</sup> and SDCAPCD has designed Rule 67.16 partly to address the requirements for ozone non-attainment areas as described in Clean Air Act (CAA) §182. Both federal and state laws require the District to implement rules that regulate emissions of ozone precursors – VOCs and oxides of nitrogen. Amended rule 67.16 serves to reduce VOC emissions, principally by reducing the VOC content limit for fountain solutions, cleaning solvents and adhesives used in printing operations. Other means designed to reduce VOC emissions are the option of using control equipment and the usage recordkeeping requirements for coatings with VOC content.

---

1. 40 CFR 81.

There are sixteen graphic arts facilities subject to Rule 67.16 in San Diego County and it is estimated that the amendments to the rule will reduce VOC emissions by 16% or approximately 10.5 tons per year.<sup>2</sup>

**EPA EVALUATION CRITERIA** - The following criteria were used to evaluate the submitted rule.

1. Enforceability - The Bluebook (*Issues Relating to VOC Regulation Cutpoints, Deficiencies, and Deviations*, EPA, May 25, 1988) and the Little Bluebook (*Guidance Document for Correcting Common VOC & Other Rule Deficiencies*, EPA Region 9, August 21, 2001) were used to evaluate compliance with the CAA §110(a)(2)(A) requirement for enforceability.
2. Stringency – We have compared Rule 67.16 against previous Rule 67.16, CARB's Compliance Assistance Program for Graphic Arts Printing Operations, June 1992 and relevant national guidance including EPA's Control Technique Guidelines (CTG) titled, Control Techniques Guidelines for Offset Lithographic Printing and Letterpress Printing, September 2006 (EPA-453/R-06-002), Control Techniques Guidelines for Flexible Package Printing, September 2006 (EPA-453/R-06-003), Control Techniques Guidelines for Industrial Cleaning Solvents, September 2006 (EPA 453/R-06-001), South Coast Air Quality Management District (SCAQMD) Rule 1130, Graphic Arts, amended October 8, 1999, SCAQMD Rule 1171, Solvent Cleaning Operations, amended February 1, 2008, Bay Area Air Quality Management District (BAAQMD) Rule 8-20, Graphic Arts Printing and Coating Operations, amended March 3, 1999 and other state and local rules for this category to help evaluate the RACT requirements of CAA §182(b)(2) and §182(f).
3. SIP Relaxation –SIP submittals must comply with CAA §110(l) and §193 regarding SIP relaxations. We have evaluated this SIP revision to determine whether it would interfere with any applicable requirement concerning attainment and reasonable further progress (RFP) or any other applicable requirement of the Act (CAA 110(l)) or modify, in a nonattainment area, any SIP-approved control requirement in effect before November 15, 1990 (CAA §193).

**EPA EVALUATION** - The following is EPA's analysis of the rules based on the evaluation criteria:

1. Enforceability - In general, Rule 67.16 is enforceable because it is clear and requires appropriate recordkeeping in section (f) and testing in section (g).

---

2. Agenda Item Memo to the Air Pollution Control Board for Public Hearing to adopt amendments to Rule 67.16 and 11, November 9, 2011.

Test methods have been updated to include the most current EPA methods as well as recent SCAQMD and American Society for Testing and Materials (ASTM) test methods that have been approved by EPA.

2. Stringency – The submitted rule generally has more stringent emission limits than the two 2006 CTG's and is consistent with analogous requirements in other areas, such as the SCAQMD Rule 1130, Graphic Arts and Rule 1171, Solvent Cleaning Operations and BAAQMD 8-20, Graphic Arts Printing and Coating Operations.

The CTG's basically require the 15 lb/day VOC emissions limit with no specific limits for material categories. Other districts have listed more graphic art material categories with some categories both greater than and some below the SDCAPCD 300 grams/liter limit. For the most part, we believe these other rules are not significantly more stringent than SDCAPCD Rule 67.16.

The cleaning solutions are also listed in various categories in other district rules and have limits both greater than and lower than SDCAPCD's 100 grams/liter limit. Although both Control Techniques Guidelines for Offset Lithographic Printing and Letterpress Printing and Control Techniques Guidelines for Flexible Package Printing refer to the Control Techniques Guidelines for Industrial Cleaning Solvents for cleaning materials, flexible packaging printing, lithographic printing and letterpress printing are exempt from the 50 grams/liter VOC limit for cleaning solvents.

3. SIP Relaxation – Rule 67.16's primary changes that represent strengthening are the lowered VOC limit for adhesives from 300 grams/liter to 150 grams/liter, the lowered limit of the fountain solution VOC limit from 15% by volume to 5% by volume and a new 8.5% VOC by volume for a new category of fountain solutions refrigerated below 60° F. In addition, the cleaning solution limit was lowered from 200 grams/liter to 100 grams/liter and the vapor pressure of cleaning material was lowered from 45 mm Hg to 5 mm Hg.

The exemption of large digital printing operations, provided specific recordkeeping is met, was made to, "...allow the District to estimate the magnitude of VOC emissions from digital printing and clarify whether further control is appropriate."<sup>3</sup> It is assumed that the VOC emissions are below the permit requirement threshold of 15 lbs/day calculated on a monthly basis as specified in SDCAPCD Rule 11, Exemptions From Rule 10 Permit Requirements,

---

3. Socioeconomic Impact Assessment for Proposed Amended Rule 67-16, Graphic Arts Operations

Adopted November 9, 2011 and effective May 9, 2012. Digital printing is any printing completed via digital files, not restricted to short runs and is able to provide variable printing such as incorporating data directly for a compact database and printing not using traditional methods of film or printing plates.<sup>4</sup> Digital printing is a relatively new technology and the VOCs emitted have not been regulated by other districts nor are the emissions addressed by any printing CTGs. For these reasons we do not consider adding the digital printing exemption a relaxation of the rule, but rather an attempt to establish a new benchmark for an evolving technology.

Therefore, we propose to determine that an approval of the submittal would comply with CAA sections 110(l) and 193 because (1) the proposed SIP revision would not interfere with the on-going process for ensuring that requirements for RFP and attainment of the NAAQS are met, and (2) the submitted SIP revisions are more stringent than the existing SIP requirements.

#### **ADDITIONAL RECOMMENDATIONS FOR THE NEXT RULE REVISION –**

The following revisions are not currently the basis for rule disapproval, but are recommended for the next time the rule is amended:

1. In subsection (b)(3)(vi), please correct the reference to the definition of large digital printing operations from (c) (12) to (c) (13).
2. In subsection (d)(1)(i) please consider listing specific categories and lowering the limits to those values in SCAQMD's Rule 1130 subsection (c) (1). Similarly, consider listing specific cleanup solvents and applying the limit values for graphic arts cleaning materials indicated in SCAQMD's Rule 1171 subsection (c) (1) (D).
3. For consistency, please add "adhesives" in the types of materials for which a current list will be maintained, in subsection (f)(1)(i): "Type of graphic arts materials, adhesives, fountain solutions or cleaning materials used;"
4. For compliance with The Little Blue Book directives, and for accurateness, please correct the following in section (g):
  - a. In subsection (g)(1), please change the reference to EPA Test method 24 to (40 CFR 60, Appendix A-7) and, for consistency, please remove the date, 9/1/1995. Please specify SCAQMD Test Method 304-91, add the title, "Determination of Volatile Organic Compounds (VOC) in Various Materials" and correct the date to "February, 1996"
  - b. In subsection (g)(2), please correct the EPA Test Method 24 to (40 CFR 60, Appendix A-7) and, for consistency, delete the date 8/6/1993.
  - c. In subsection (g)(3), please correct the dates for SCAQMD's test method 313-91 from 2/1/1993 to June, 1993 and for SCAQMD test method 313-91 from 2/1/1993 to February, 1993.

---

4. EIIP Volume II, Chapter 15, Preferred and Alternate Methods for Estimating Air Emissions From the Printing, Packaging, and Graphic Arts Industry, May 2002, page 15.2-3

- d. In subsection (g)(4), please correct the title for the District's "Procedure for Estimating the Vapor Pressure of VOC Mixtures" to the District's "**County of SDAPCD's** Procedures for Estimating the Vapor Pressure of VOC Mixtures." Similarly, please correct the title of the ASTM method in the same subsection to "**Standard Test Method for** Vapor Pressure-Temperature Relationship and Initial Decompensation Temperatures of Liquids by Isoteniscope."
- e. In subsection (g)(6), please correct the dates for SCAQMD's test method 303-91 from 8/1/1993 to August, 1993.
- f. In subsection (g)(7), please correct the reference to EPA Test Method 25 A and /or 18 to (40 CFR 60, Appendix A-7 and A-6) and remove the date 9/25/1996. Similarly, change the reference to EPA Test Methods 204 and 204A through 204F to (40 CFR 51, appendix M) and remove the date 6/4/97.

**EPA ACTION** – The rule largely fulfills the relevant CAA §110 and Part D requirements. EPA staff recommends approval of Rule 67.16 pursuant to CAA §110(k)(3) and §301(a).

#### **ATTACHMENTS -**

- 1. SDAPCD Rule 67.16, Graphic Arts Operations, Adopted November 9, 2011 and Effective May 9, 2012.
- 2. SDAPCD Rule 67.16, Graphic Arts Operations, Adopted and Effective May 15, 1996.

#### **ADDITIONAL REFERENCES –**

- 1. EPA's Control Techniques Guidelines for Industrial Cleaning Solvents (EPA 453/R-06-001), September 2006  
[http://www.epa.gov/ttn/naaqs/ozone/ctg\\_act/200609\\_voc\\_epa453\\_r-06-001\\_ind\\_cleaning\\_solvents.pdf](http://www.epa.gov/ttn/naaqs/ozone/ctg_act/200609_voc_epa453_r-06-001_ind_cleaning_solvents.pdf)
- 2. EPA's Control Techniques Guidelines for Offset Lithographic Printing and Letterpress Printing (EPA-453/R-06-002) September 2006  
[http://www.epa.gov/ttn/naaqs/ozone/ctg\\_act/200609\\_voc\\_epa453\\_r-06-002\\_litho\\_letterpress\\_printing.pdf](http://www.epa.gov/ttn/naaqs/ozone/ctg_act/200609_voc_epa453_r-06-002_litho_letterpress_printing.pdf)
- 3. EPA's Control Techniques Guidelines for Flexible Package Printing (EPA-453/R-06-003) September 2006  
[http://www.epa.gov/ttn/naaqs/ozone/ctg\\_act/200609\\_voc\\_epa453\\_r-06-003\\_flexible\\_package\\_printing.pdf](http://www.epa.gov/ttn/naaqs/ozone/ctg_act/200609_voc_epa453_r-06-003_flexible_package_printing.pdf)
- 4. CARB's Compliance Assistance Program "Graphic Arts Printing Operations Technical Manual", June 1992
- 5. "Issues Relating to VOC Regulation Cutpoints, Deficiencies, and Deviations," (a.k.a., Bluebook), EPA OAQPS, May 25, 1988.  
[http://www.epa.gov/ttn/naaqs/ozone/ozonotech/voc\\_bluebook.pdf](http://www.epa.gov/ttn/naaqs/ozone/ozonotech/voc_bluebook.pdf)

6. “Guidance Document for Correcting Common VOC & Other Rule Deficiencies,” (a.k.a., Little Bluebook), EPA Region 9, August 21, 2001.  
<http://www.epa.gov/Region09/air/sips/littlebluebook2001.pdf>